

**REMARKS**

Claims 1, 3-19, and 21-27 are pending. Claims 2 and 20 have been canceled. Claims 12-15 have been withdrawn from consideration. Claims 23-27 have been added by the present amendment.

Claims 1, 5, 6, 7, 16, 17, and 19 have been amended. No new matter has been added.

The specification and the drawings have been amended. The specification has been amended to accord with FIG. 3. FIG. 3 has been amended to add reference numerals 68, 69 to indicate the major flow and minor flow out of virtual impactor 64 as described in paragraph 0022. FIG. 4 has been amended to correct the text in block 70 to accord with paragraph 0023. No new matter has been added.

Claims 2 and 4-6 stand rejected under 35 U.S.C. § 112, 2<sup>nd</sup> para. as indefinite. Claim 2 has been canceled and subject matter drawn therefrom has been added to claim 1. Claims 4, 5, and 6 have been amended to address the Examiner's concerns.

Claims 1, 3, 5, and 7-11 were rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 5,932,795 to Koutrakis et al. (hereinafter "Koutrakis"). Claims 1, 3, 7, 9, and 10 were rejected under 35 U.S.C. § 103(a) as obvious over U.S.

Patent No. 5,922,976 to Russell et al. (hereinafter "Russell").  
Claims 2, 4, and 6 were indicated as being allowable.

Claim 1 has been amended to recite subject matter drawn from original claim 2. In particular, claim 1 now relates to a system for monitoring an aerosol that includes an impactor and a second sensor. The impactor is to receive a first portion of particles and to remove a portion of the received particles to leave a fractionate portion of the particles. The second sensor is to measure a characteristic of the fractionate portion of the particles. Since these elements and limitations are neither described nor suggested by Koutrakis or Russell, it is believed that claim 1, as amended, is allowable.

Claims 16-21 were rejected under 35 U.S.C. § 102(b) as anticipated by Koutrakis. As amended, claim 16 relates to a system for measuring a characteristic of an aerosol. The system includes a first impactor assembly, a second impactor assembly, and a first sensor. The first sensor directly measures a mass of particles emitted from the second impactor assembly.

Koutrakis neither describes nor suggests a first sensor that directly measures a mass of particles emitted from such an impactor assembly. Referring to FIGS. 1 and 4 of Koutrakis, Koutrakis uses a pair of pressure transducers to measure the pressure drop across a pair of Nucleopore filters. See, e.g.,

col. 19, line 20-54 of Koutrakis. Since the pressure drop across the filters changes with time as the filters clog with particulates, it is the volume of the clogging particulates (as arranged in the filters) that is directly measured by Koutrakis' pressure transducers.

While Koutrakis acknowledges that sensors which directly measure a mass of particles exist (such as the TEOM described in col. 1, line 38 - col. 2, line 6) and indicates that they "originally appeared to be very promising," Koutrakis does not describe their use in a collection system. Moreover, Koutrakis also identifies several difficulties associated with their use. These difficulties include losses of semivolatile organic and inorganic compounds as well as adsorption and desorption from sensor surfaces. It is therefore respectfully submitted that Koutrakis teaches away from the use of the TEOM.

In light of Koutrakis neither describing nor suggesting a first sensor that directly measures a mass of particles emitted from an impactor assembly as claimed, it is respectfully submitted that claims 16-21 are allowable.

New claim 23 relates to a system that includes an impactor assembly and a mass sensor to directly measure a mass of a portion of particles emitted from the impactor assembly. It is

respectfully submitted that claim 23 is allowable over Koutrakis for at least the reasons given with respect to claims 16-21.

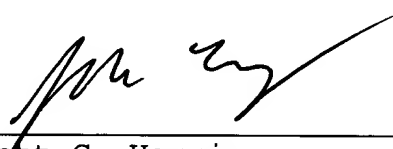
An Information Disclosure Statement was filed on February 11, 2004 with the Response to the Restriction Requirement. However, Applicant did not receive an initialed copy of the filed Form PTO-1449 with the action mailed May 11, 2004.

Applicant respectfully requests that the Examiner consider the references cited thereon and return the initialed Form with the next Action. If the Information Disclosure Statement is not available, the Examiner is respectfully invited to telephone the undersigned and request an additional copy.

Applicant asks that all claims be allowed. Enclosed is a check for excess claim fees. Please apply any other charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

Date: June 30, 2004

  
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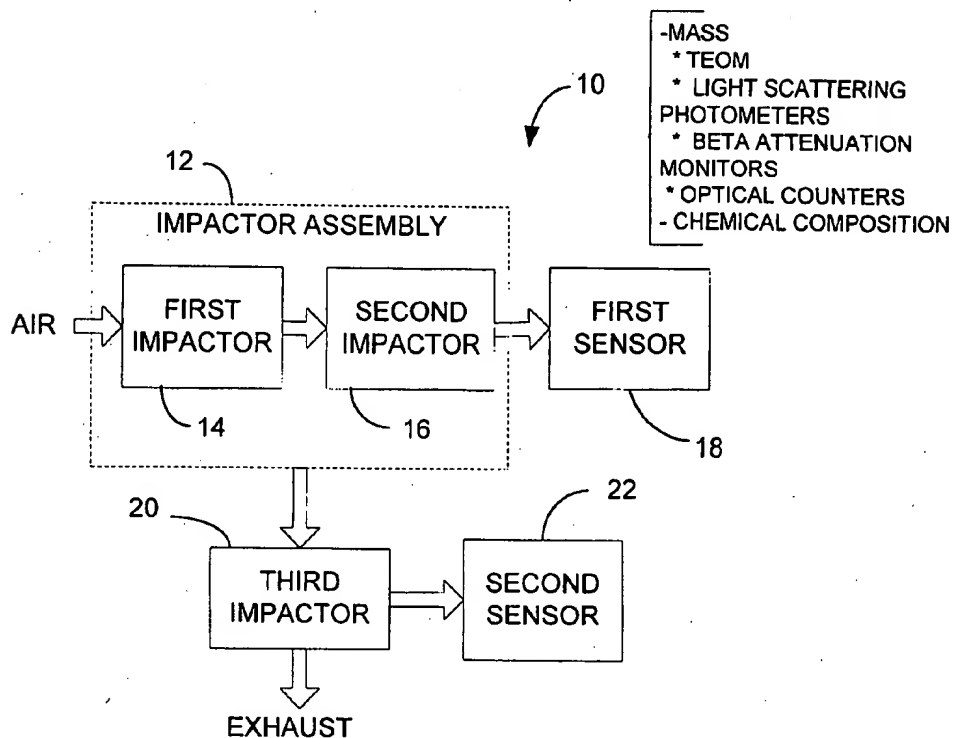
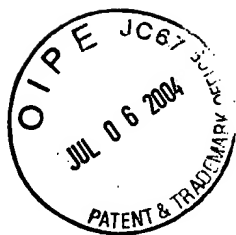


FIG. 1

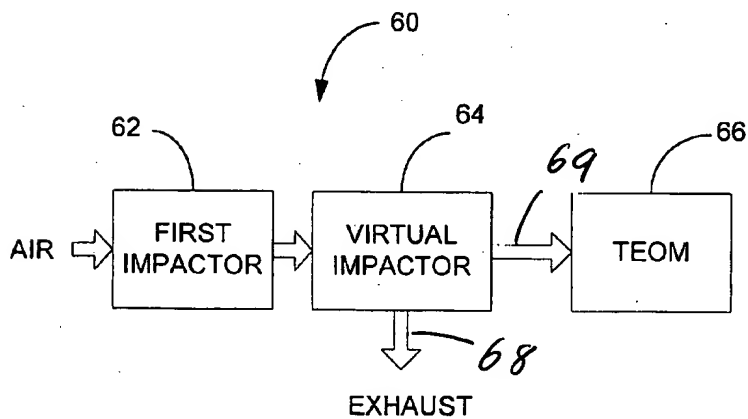


FIG. 3

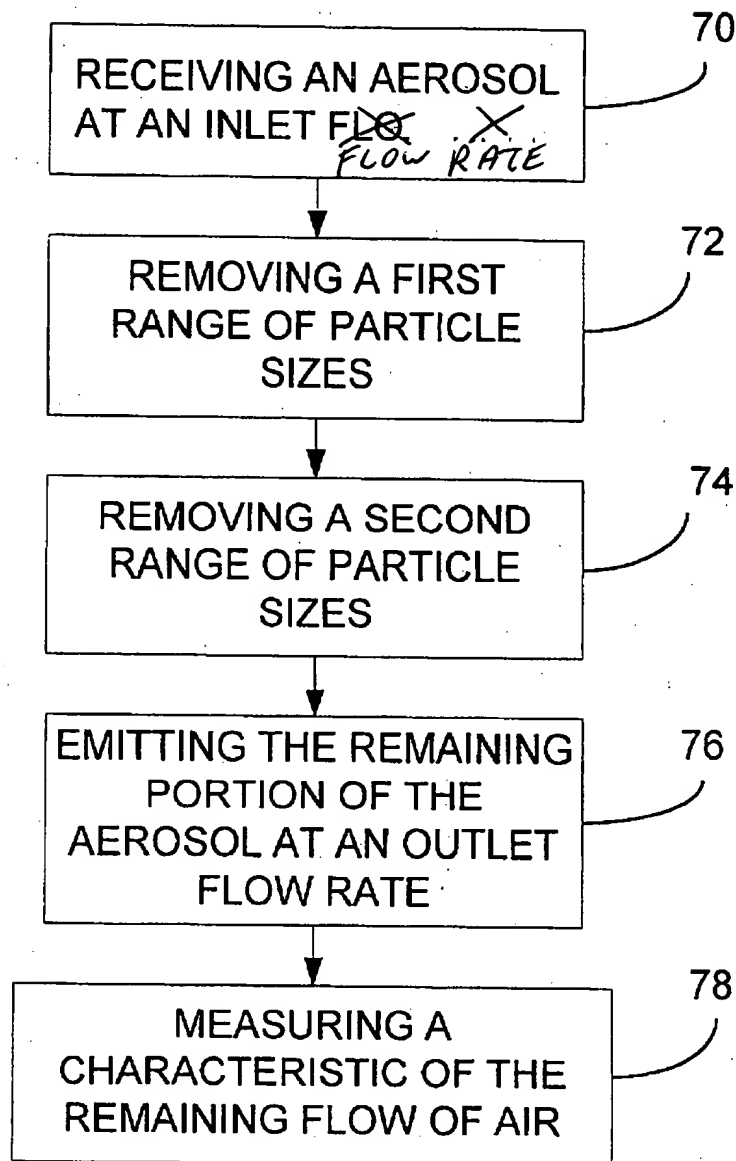
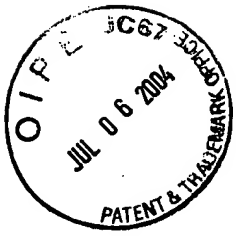


FIG. 4